

**IN THE CLAIMS:**

1. (Currently Amended) A banknote detecting unit for a banknote distinguishing device comprising:

a first transmission sensor unit including

a first light emitting section emitting a first light with a first wavelength, and

5 a first light receiving section, wherein the first light emitting section and the first light receiving section are located on an optical axis of the first light emitting section which slants relative to a banknote passageway, and the first light emitting section and the first light receiving section are positioned on opposite sides of a banknote passageway;

a first reflecting sensor unit including

10 the first light emitting section, and

a second light receiving section, wherein the first light emitting section and the second light receiving section are located on one side of the banknote passageway;

a second transmission sensor unit including

15 a second light emitting section located on an opposing side of the banknote passageway relative to the first light emitting section, the second light emitting section emitting a second light with a second wavelength, and

the second light receiving section located to receive the second light passing through the banknote passageway;

a second reflection sensor unit including

20 the second light emitting section, and

the first light receiving section;

a microprocessor controlling a switching of the first light emitting section to emit the first light of the first wavelength and a switching of the second light emitting section to emit the second light of the second wavelength;

25        a first emitting amount adjusting unit adjusting an emitting amount of the first light emitting section such that the emitting amount of the first light emitting section reaches a first predetermined emitting amount, wherein the adjustment of the emitting amount of the first light emitting section is performed through detection of the first light by the first light receiving section;

30        a second emitting amount adjusting unit adjusting an emitting amount of the second light emitting section such that the emitting amount of the second light emitting section reaches a second predetermined emitting amount, wherein the adjustment of the emitting amount of the second light emitting section is performed through detection of the second light by the second light receiving section;

35        a first amplifier for the second transmission sensor unit adapted to amplify an output of the second light receiving section at a first predetermined gain;

a second amplifier for the first reflection sensor unit adjusting a gain of the output of the second light receiving section such that the gain of the output of the second light receiving section reaches a first predetermined amount defined for the second light receiving section when

40        a standard paper for adjusting is inserted into the banknote passageway and light is emitted from the first light emitting section;

a third amplifier for the first transmission sensor unit adapted to amplify an output of the first light receiving section at a second predetermined gain; and

a fourth amplifier for the second reflection sensor unit adjusting a gain of the output of  
45 the first light receiving section such that the gain of the output of the first light receiving section  
reaches a second predetermined amount defined for the first light receiving section when the  
standard paper for adjusting is inserted into the banknote passageway and light is emitted from  
the second light emitting section.

~~a transmitting sensor unit which includes a light emitting section and a light receiving~~  
50 ~~section which are located on an optical axis of the light emitting section and positioned on~~  
~~opposite sides to a banknote passageway;~~

~~a reflecting sensor unit which includes a light transmitting section and a light receiving~~  
~~section which are located on one side of the banknote passageway which is characterized in that:~~  
~~a first transmitting sensor is structured by a first optical axis of a first light emitting section~~  
55 ~~which slants relative to the banknote passageway and a first light receiving section which is~~  
~~located on the first optical axis and is located opposite the first light emitting section;~~

~~a first reflecting sensor which is structured by the first light emitting section and a second~~  
~~light receiving section which is located on the same side as the first light emitting section relative~~  
~~to the banknote passageway.~~

2. (Original) The banknote detecting unit for the banknote distinguishing device  
claimed in Claim 1 wherein the first optical axis crosses at an obtuse angle relative to the  
banknote's traveling direction.

3. (Currently Amended) The banknote detecting unit for the banknote  
distinguishing device claimed in Claim 1 ~~further includes a second light emitting section which~~

is located opposite to the first light emitting section along the banknote passageway, wherein the second light emitting section is located on a second optical axis.

4. (Cancelled)

5. (Currently Amended) The banknote detecting unit for the banknote distinguishing device claimed in Claim [[4]] 3 wherein the first light emitting section projects infrared light radiation, and the second light emitting section emits non-infrared light radiation.

6. (Currently Amended) The banknote detecting unit for the banknote distinguishing device claimed in Claim 3 [[4]]:

further includes a reading controlling unit which, when the first light emitting section emits rays, a receiving output of the first receiving section is read, and afterwards emitting from  
5 the first emitting section stops, when the second light emitting section emits rays, the receiving output of the second light receiving section is read, and afterwards the receiving output of the first light receiving section is read.

7. (Currently Amended) The banknote detecting unit for the banknote distinguishing device comprising:

a first transmitting sensor is structured by a first light emitting section which slants at a first light axis to a banknote passageway and a first light receiving section which is located on  
5 the first light axis and is located opposite the first light emitting section relative to the banknote passageway,

a first reflecting sensor which is structured by the first light emitting section and a second light receiving section which is located on the same side of the first light emitting section relative to the banknote passageway,

10 an emitting amount adjusting unit which adjusts an emitting amount, when the first light emitting section emits an output of the first light receiving section at a predetermined amount, and

a receiving outputting adjusting unit which adjusts a gain to the output of the second light receiving section when the output reaches a predetermined amount from the second light  
15 receiving section, a standard paper for adjusting is inserted into a banknote passageway, and light is emitted from the first light emitting section.

8. (Currently Amended) In a document verification system for receiving and verifying the authenticity of a document adjacent a document passageway, the improvement comprising:

a transmitting sensor assembly for emitting radiation to contact a document operatively  
5 positioned relative to the document passageway including a first radiation emitting section on one side of the document passageway and a first radiation receiving section on another side of the document passageway, the optical axis of the first radiation emitting section and first radiation receiving section is slanted relative to an axis of the document passageway; [[and]]

a first emitting amount adjusting unit adjusting an emitting amount of the first radiation  
10 emitting section such that the emitting amount of the first radiation emitting section reaches a first predetermined emitting amount, wherein the adjustment of the emitting amount of the first

radiation emitting section is performed through detection of a first radiation amount by the first radiation receiving section;

15 a reflecting sensor assembly for receiving reflected radiation from the document including a second radiation receiving section positioned on the same side of the document passageway as the first radiation emitting section and operatively positioned to receive reflected radiation after contact with the document wherein the first radiation receiving section receives radiation transmitted through the document; and

20 a second emitting amount adjusting unit adjusting an emitting amount of the second radiation emitting section such that the emitting amount of the second radiation emitting section reaches a second predetermined emitting amount, wherein the adjustment of the emitting amount of the second radiation emitting section is performed through detection of a second radiation amount by the second radiation receiving section.

9. (Currently Amended) In a document verification system for receiving and verifying the authenticity of a document adjacent a document passageway, the improvement comprising:

5 a first transmitting sensor assembly for emitting radiation to contact a document operatively positioned relative to the document passageway including a first radiation emitting section on a first side of the document passageway and a first radiation receiving section on a second side of the document passageway, a first optical axis of the first radiation emitting section and first radiation receiving section is slanted relative to an axis of the document passageway;

10 a first reflecting sensor assembly for receiving reflected radiation from the document including a second radiation reflection receiving section positioned on the first side of the

document passageway and operatively positioned to receive reflected radiation after contact with the document wherein the first radiation receiving section receives radiation transmitted through the document;

15 a second transmitting sensor assembly for emitting radiation to contact a document operatively positioned relative to the document passageway including a second radiation emitting section on a second side of the document passageway and a second radiation receiving section on the first side of the document passageway, a second optical axis of the second radiation emitting section and second radiation receiving section is slanted relative to an axis of the document passageway and crosses the first optical axis;

20 a second reflecting sensor assembly for receiving reflected radiation from the document including a ~~third~~ first radiation reflection receiving section positioned on the second side of the document passageway and operatively positioned to receive reflected radiation after contact with the document wherein the second radiation receiving section receives radiation transmitted through the document; [[and]]

25 a control unit to activate the first radiation emitting section and the second radiation emitting section in a manner to avoid interference between the emitted radiation;

a first amplifier for the second transmitting sensor assembly adapted to amplify an output of the second radiation receiving section at a first predetermined gain;

30 a second amplifier for the first reflecting sensor assembly adjusting a gain of the output of the second radiation receiving section such that the gain of the output of the second radiation receiving section reaches a first predetermined amount defined for the second radiation receiving section when a standard paper for adjusting is inserted into the banknote passageway and light is emitted from the first radiation emitting section;

35     a third amplifier for the first transmitting sensor unit adapted to amplify an output of the  
first radiation receiving section at a second predetermined gain; and  
a fourth amplifier for the second reflecting sensor unit adjusting a gain of the output of  
the first radiation receiving section such that the gain of the output of the first radiation receiving  
section reaches a second predetermined amount defined for the first radiation receiving section  
when the standard paper for adjusting is inserted into the banknote passageway and light is  
40     emitted from the second radiation emitting section.

10.     (Original) The document verification system of Claim 9 wherein the first radiation emitting section emits light at a first wavelength and the second radiation emitting section emits light at a second wavelength different than the first wavelength.

11.     (Original) The document verification system of Claim 9 wherein the control unit activates the first radiation emitting section and the second radiation emitting section multiple times during a transit of a document to provide a set of data representative of the document to be verified.

12.     (Original) The document verification system of Claim 11 wherein the control unit stores a predetermined set of data representative of a valid document and compares the set of data representative of the document to be verified and issues a verification signal if the comparison is within predetermined ranges.

13.     (New) The banknote detecting unit for the banknote distinguishing device claimed in Claim 6 wherein the standard paper is a standard calibrating paper.



14. (New) The banknote detecting unit for the banknote distinguishing device claimed in Claim 13 further comprising an initial setting button connected to the microprocessor and sending an initial setting signal to the microprocessor when activated.